ABN 48 612 666 172

Sydney | Brisbane | Melbourne

Level 23, 101 Miller St
North Sydney NSW 2060

PO Box 3
North Sydney NSW 2059
Ph (02) 94371000

20 July 2021

SINSW
c/- Currie & Brown
Suite 2, Level 10
3 Spring Street
Sydney NSW 2000

Attention: Mr. M. Havdahl

Dear Martin,

RE: Hastings SC | SSDA ESD Addendum

JOB NO.: 200360

REVISION NO.: [B]

The purpose of this addendum letter is to provide additional details of proposed ESD initiatives for the Hastings Secondary College development and how they support a more ambitious sustainability strategy. In particular, this letter provides additional details on the following items:

- The response to the microclimate;
- Urban heat island mitigation; and
- Proposed passive design strategies to ensure that access to natural light and ventilation are provided and maximised for all internal spaces.

The proposed Hastings Secondary College development has been designed to a high level of sustainability above and beyond regulatory requirements.

All new buildings are being designed to achieve a 4 Star Green Star rating, representing Australian Best Practice. Furthermore, the current design is targeting 54 Green Star points, which is 9 points above the 45 point requirements to achieve 4 Star, and is therefore approaching the level of 5 Star Australian Excellence.

For existing buildings undergoing alteration and refurbishment, whilst these are not targeting a Green Star rating, a similar sustainability framework in accordance with the EFSG is applied to ensure a similarly high level of sustainable outcome.

This approach aims to deliver new public school facilities that are both sustainable and cost-effective, in construction and during operation. In addition, to provide the best possible learning experience, particular attention has been focused on creating a healthy and thermally comfortable environment for students and staff.

Microclimate Response

Climate risk assessments, which include a detailed assessment of the local climatic conditions and projections of climatic trends into the future, have been carried out to inform the design of the buildings. Key issues including hotter and dryer conditions and more extreme maximum temperatures have been identified and these issues have been responded to and addressed by the design.

Energy/Thermal modelling using local weather data files have been used to design both the thermal envelope and HVAC systems of the buildings. This is to ensure that the HVAC system is sized correctly and that a high level of thermal comfort can be achieved.

Urban Heat Island Mitigation

To reduce the contribution of the project sites to the urban heat island effect, the project is committed to ensuring at least 75% of the total project site area comprises of any combination of the following:

- Vegetation;
- Roofing materials with:
  - three year SRI of minimum 64 for roof pitched < 15° and 34 for roof pitched > 15°; or
  - where product's three year SRI is not available, initial SRI of minimum 82 for roof pitched < 15° and 39 for roof pitched > 15°.
- Unshaded hardscaping elements with three year SRI of minimum 34 or initial SRI of minimum 39;
- Hardscaping elements shaded by overhanging vegetation or roof structures, including photovoltaic panels; or
- Areas directly to the south of vertical building elements, including areas shaded by these elements at the summer solstice.

To ensure project meets this requirement, 1 point is targeted for Green Star credit 25 "Heat Island Effect".

Passive Design

Passive design principles have been employed throughout the design to help minimise the need for active cooling and heating.

Key features include appropriate building orientation and corresponding external shading devices. Windows are sized and located carefully to provide good daylight to rooms but avoiding glare, unnecessary solar heat gain and excessive thermal loss during winter. High thermal performance glazing will be provided throughout. The building envelope, such as walls and roofs, will be provided with appropriate levels of insulation to help ensure energy efficiency and thermal comfort. The colour of building materials will also be selected for their thermal performance, in particular a lighter coloured roof will be used where possible to reduce the unwanted solar heat gains and minimise the roofs contribution to heat island effect.

A high level of natural daylight is targeted via the combination of appropriately sized & located windows and higher VLT glass. Operable window openings will be provided to facilitate natural ventilation, including cross ventilation where possible, for natural comfort in summer and to maintain a healthy indoor environment.

Yours sincerely,

Lawrence Yu

ESD Group Manager